

From: [Restivo, Angela](#)
To: [R6HarveyInfo](#)
Subject: FW: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017
Date: Saturday, September 9, 2017 3:11:45 PM

From: Ngo, Kim
Sent: Saturday, August 26, 2017 1:50 PM
To: Restivo, Angela <Restivo.Angela@epa.gov>
Subject: RE: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017

sure

From: Restivo, Angela
Sent: Saturday, August 26, 2017 1:49 PM
To: Ngo, Kim <Ngo.Kim@epa.gov>
Subject: RE: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017

Can the REOC call you?

From: Ngo, Kim
Sent: Saturday, August 26, 2017 1:49 PM
To: Tingley, Kevin <Tingley.Kevin@epa.gov>; Brown, Jamesr <brown.jamesr@epa.gov>; McCasland, Mark <McCasland.Mark@epa.gov>; Waite, Andrew <Waite.Andrew@epa.gov>; Restivo, Angela <Restivo.Angela@epa.gov>; Rodriguez, Jose <Rodriguez.Jose@epa.gov>
Subject: RE: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017

Yes, thanks for sending

From: Tingley, Kevin
Sent: Saturday, August 26, 2017 1:16 PM
To: Brown, Jamesr <brown.jamesr@epa.gov>; Ngo, Kim <Ngo.Kim@epa.gov>; McCasland, Mark <McCasland.Mark@epa.gov>; Waite, Andrew <Waite.Andrew@epa.gov>; Restivo, Angela <Restivo.Angela@epa.gov>; Rodriguez, Jose <Rodriguez.Jose@epa.gov>
Subject: FW: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017

Region 6 Water Program,

Please see this report from the DHS-OCIA. I am not sure what they are using as an information source.

If you would like me to continue to forward reports like this, please let me know. If I don't hear back from you, I'll assume that either this information is not useful to you, or that you receive it from another source.

Thanks,

-Kevin

Kevin Tingley
US Environmental Protection Agency
Water Security Division
1200 Pennsylvania Ave NW (4608T)
Washington, DC 20460

202-564-4619 (o)
202-689-9402 (c)

From: Travers, David
Sent: Saturday, August 26, 2017 8:41 AM
To: Tingley, Kevin <Tingley.Kevin@epa.gov>
Subject: Fwd: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017

David Travers, PhD
Director, Water Security Division
U. S. Environmental Protection Agency
Ph: 202-564-4638
www.epa.gov/waterresilience

Begin forwarded message:

From: "OCIA Integrated Analysis Cell" <OCIAIntegratedAnalysisCell@hq.dhs.gov>
Subject: (U) Hurricane Harvey - Water and Wastewater Systems Infrastructure Impact Assessment - 25 August 2017

(U) This product has been sent to all recipients on OCIA's widest dissemination list.

(U) Assessment

(U) OCIA assesses that Hurricane Harvey will have extended periods of heavy rainfall and flooding, which will be the greatest threats to the Water and Wastewater Systems Sector infrastructure. Heavy rainfall and subsequent flooding can affect water and wastewater systems by inundating electrical components, damaging components via debris flows, or limiting employee access. Significant flooding from heavy rainfall is expected for middle, upper, and coastal Texas over the next 5 days.

(U) The OCIA model converts estimated precipitation into riverine flooding. The model assumes that most of the rainfall will occur over the first two days of the expected five days of rainfall and takes into consideration the existing saturation of the area due to earlier rainfalls. The peak river flows are anticipated to occur during the final three days of rainfall. Due to uncertainty, actual results may vary from what is modeled.

(U//FOUO) There are 821 drinking water treatment facilities and 172 wastewater treatment facilities (not represented in the figures) located in zones which are estimated to possibly reach at least 3 feet over the next 5 days, per OCIA modeling (current as of 1800 EDT August, 25, 2017). Facilities located near the coast are at greater flood risk from the combined effects of storm surge and heavy rainfall.

(U) Public health issues could arise with regard to drinking water in flooded zones; it is likely that a Boil Water Advisory will be issued by the utilities if there is any change in pressure or water quality to guard against acute microbial risks. Increased requirements for water supply treatments are also likely as floodwaters enter wastewater treatment areas. If water treatment mitigation options are not sufficient, the public notification would change to "Do Not Drink", though this rarely happens.

(U//FOUO) OCIA assesses that Hurricane Harvey will have a moderate-to-high impact on the Water and Wastewater Systems Sector as a result of power losses. Loss of power may cause facilities and systems to exceed backup battery and generator fuel reserves. Closed roadways and prioritization of other assets may slow fuel resupply.

(U//FOUO) There are 173 drinking water treatment and 17 wastewater treatment facilities within the 50 to 100 percent power outage zones (figure 2 in the attachment). These facilities are likely to be without power until the local electric power distribution grid is back online, or until workers can safely enter the treatment plants, assess all damages, and safely operate the backup generators (assuming the plant has generators and they are operational).

(U) The length of time that backup generation is available depends on the facility's onsite fuel storage and the ability to obtain offsite fuel, which relies on roads to be clear and passable.

(U) The attached Hurricane Harvey - Water and Wastewater Systems product is UNCLASSIFIED//FOR OFFICIAL USE ONLY and should be handled in accordance with DHS policy.

(U) The attached product can also be accessed via the OCIA HSIN-CI page by clicking the following link:

[Hurricane Harvey - Water and Wastewater Systems](#)

(U) If you did not receive this OCIA New Product Alert directly, you can join the Critical Infrastructure Community of Interest (HSIN-CI) by sending your first and last name, your employer, your e-mail address, and your reason for requesting access to HSIN-CI to HSINCI@hq.dhs.gov. HSIN-CI members can access all of OCIA's past products.

(U) This and other OCIA products are visible at the following websites:

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[HSIN-CI OCIA site](#)

[HSIN-Intel OCIA site](#)

[Intelink Unclass OCIA site](#)

[Intelink SIPR OCIA site](#)

[Intelink JWICS OCIA site](#)

(U) PSCD Ops, please forward to the RDs and PSAs.

(U) Please include feedback and suggestions using the NPPD Feedback Survey located as a second attachment compared to its usual location on the last page of the product. Additionally, if you have any further questions or concerns they can be directed to OCIAIntegratedAnalysisCell@hq.dhs.gov

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For more information about the Office of Cyber and Infrastructure Analysis, visit <http://www.dhs.gov/office-cyber-infrastructure-analysis>